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ASSIGNMENT BOOKLET 3B

SCN2285 Science 24

Module 3: Section 3 Assignment and Section 4 Assignment

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| Date Assignment Submitted: _____ | (If label is missing or incorrect) Student File Number: _____ | Assigned Teacher: _____ |
| Time Spent on Assignment: _____ | Module Number: _____ | Assignment Grading: _____ |
| | | Graded by: _____ |
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| <div>Student's Questions and Comments</div> <div></div> | | |
| <div>Apply Module Label Here</div> <div><div>Name</div><div>Address</div><div>Postal Code</div></div> <div>Please verify that preprinted label is for correct course and module.</div> | | |
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- Has your work been reread to ensure accuracy in spelling and details?
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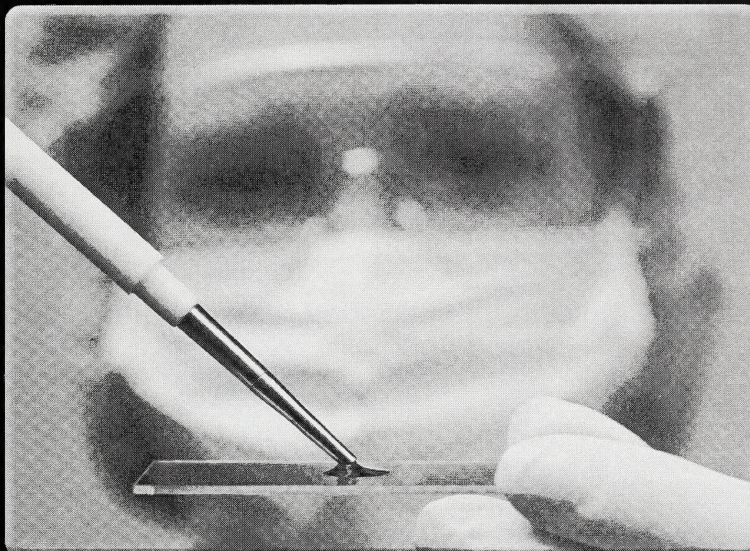
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SCIENCE 24

MODULE 3 ■ ASSIGNMENT BOOKLET 3B

ASSIGNMENT BOOKLET 3B ■ ASSIGNMENT BOOKLET 3B ■ ASSIGNMENT BOOKLET 3B ■ ASSIGNMENT BOOKLET 3B ■



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3B ■ ASSIGNMENT BOOKLET 3B

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Summary

| | Total Possible Marks | Your Mark |
|----------------------|----------------------|-----------|
| Section 3 Assignment | 31 | |
| Section 4 Assignment | 23 | |
| | 54 | |

Teacher's Comments

Science 24

Module 3: Disease Defence and Human Health

Assignment Booklet 3B

Section 3 Assignment and Section 4 Assignment

Learning Technologies Branch

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The Learning Technologies Branch acknowledges with appreciation the Alberta Distance Learning Centre and Pembina Hills Regional Division No. 7 for their review of this Assignment Booklet.

| | |
|-------------------------------|---|
| This document is intended for | |
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| Teachers | ✓ |
| Administrators | |
| Home Instructors | |
| General Public | |
| Other | |



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- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

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ASSIGNMENT BOOKLET 3B
SCIENCE 24: MODULE 3
SECTION 3 ASSIGNMENT AND SECTION 4 ASSIGNMENT

This Assignment Booklet is worth 54 marks out of the total 100 marks for the assignments in Module 3. The value of each assignment and each question is stated in the left margin.

Read all parts of your assignment carefully and record your answers in the appropriate places. If you have difficulty with an assignment, go back to your Student Module Booklet and review the appropriate lesson. Be sure to proofread your answers carefully before submitting your Assignment Booklet.

31

Section 3 Assignment: Protecting Yourself from Disease

For questions 1 to 4, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

1

_____ 1. Which of the following body structures protects against disease by trapping pathogens?

- A. hair
- B. eyelashes
- C. tonsils and adenoids
- D. all of the above

1

_____ 2. Which of the following helps the immune system build up a resistance for the next time the same pathogen invades your body?

- A. tears
- B. skin
- C. tonsils and adenoids
- D. nose and sinuses

1

_____ 3. The swelling and increased redness surrounding an injury to or infection in the body is known as

- A. tonsillitis
- B. macrophages
- C. a physical defence
- D. an inflammatory response

- ① _____ 4. Specialized white blood cells that surround and destroy damaged cell parts and pathogens are called
- A. tonsillitis
 - B. macrophages
 - C. immune cells
 - D. invading cells
- ② 5. Why are physical defences called the body's first line of defence against disease?
- _____
- _____
- _____
- _____



Return to page 44 of the Student Module Booklet and begin Lesson 2.

For questions 6 to 12, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

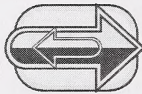
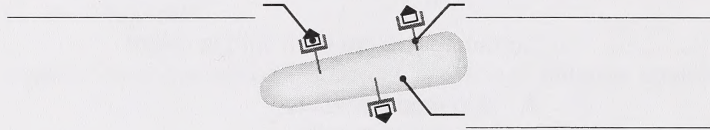
- ① _____ 6. Which of the following is an example of artificially acquired active immunity?
- A. antibodies from snake venom
 - B. strawberry tongue
 - C. hepatitis B vaccine
 - D. antibodies passed on to breast-fed babies
- ① _____ 7. The purpose of helper T cells is to
- A. make and release antibodies
 - B. attach to antigens and destroy them
 - C. store information about the antigen of an invader
 - D. identify the antigens on a macrophage that has engulfed a pathogen
- ① _____ 8. A purpose of B cells is to
- A. make and release antibodies
 - B. attach to antigens and destroy them
 - C. store information about the antigen of an invader
 - D. identify the antigens on a macrophage that has engulfed a pathogen

- ① _____ 9. The purpose of memory cells is to
- A. make and release antibodies
 - B. attach to antigens and destroy them
 - C. store information about the antigen of an invader
 - D. identify the antigens on a macrophage that has engulfed a pathogen
- ① _____ 10. Immunity you are born with is called
- A. acquired immunity
 - B. passive immunity
 - C. inherited immunity
 - D. active immunity
- ① _____ 11. People with Type A blood can donate blood to people with
- A. Type O blood
 - B. Type A blood and Type AB blood
 - C. Type B blood and Type AB blood
 - D. Type A blood only
- ① _____ 12. People with Type AB blood are universal recipients because they can
- A. receive blood from Type A or Type B people only
 - B. receive blood from Type O people only
 - C. receive blood from people with Types A, B, AB, or O
 - D. donate blood to people with Types A, B, AB, or O
13. Decide whether each of the following statements is true (T) or false (F). Place your answer in the blank space given.
- ① _____ a. Viruses reproduce only inside living things.
- ① _____ b. Helper T cells make and release antibodies.
- ① _____ c. B cells produce only memory cells.
- ① _____ d. Passive immunity lasts longer than active immunity.

3

14. Label the diagram using terms from the following list:

- B cell
- pathogen
- antibody
- antigen
- memory cell



Return to page 50 of the Student Module Booklet and begin Lesson 3.

For questions 15 to 18, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

1

_____ 15. Dead or weakened pathogens injected into your blood are called

- A. vaccines
- B. antitoxins
- C. immunizations
- D. antibodies

1

_____ 16. After you are given a vaccine, which of the following does your body produce to fight a specific disease?

- A. pathogens
- B. antigens
- C. antitoxins
- D. antibodies

1

_____ 17. Allergies develop when

- A. you get a vaccination
- B. you get a scratch test
- C. your immune system cannot build antibodies
- D. your immune system overreacts to pollen, dust, animal fur, etc.

1

_____ 18. Immunotherapy is used to treat people with

- A. measles
- B. polio
- C. allergies
- D. whooping cough

19. Decide whether each of the following statements is true (T) or false (F). Place your answer in the blank space given.

①

_____ a. A symptom of tetanus is mild fever and rash.

①

_____ b. You are born with all of your mother's antibodies.

①

_____ c. A scratch test is used to check for allergies.

①

_____ d. Allergic reactions can result in death.



Return to page 54 of the Student Module Booklet and begin Lesson 4.

For questions 20 to 22, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

①

_____ 20. Medications to treat symptoms of colds and flus that can be purchased without prescription are called

- A. antibiotics
- B. bacterial infections
- C. over-the-counter drugs
- D. prescription drugs

①

_____ 21. Antibiotics are made from

- A. fungi
- B. mould
- C. bacteria
- D. all of the above

①

_____ 22. Which information would **not** be on the label of an over-the-counter drug?

- A. possible side effects
- B. symptoms the medication treats
- C. doctor's recommendation for the product
- D. amount of medication that should be taken



Return to page 59 of the Student Module Booklet and begin the Section 3 Review.

23

Section 4 Assignment: Genetics and Health

For questions 1 to 5, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

- ① _____ 1. The branch of science that studies how characteristics or traits are passed on from parent to offspring is
- A. zoology
 - B. genetics
 - C. physics
 - D. heredity
- ① _____ 2. The “rungs” on the DNA ladder are made up of
- A. chromosomes
 - B. X and Y chromosomes
 - C. base pairs
 - D. traits
- ① _____ 3. Which of the following shows the proper order, from largest to smallest, of the relationship of the parts between your body and its genes?
- A. body → DNA → cells → chromosomes → nucleus → genes
 - B. body → cells → nucleus → DNA → chromosomes → genes
 - C. body → cells → chromosomes → DNA → nucleus → genes
 - D. body → cells → nucleus → chromosomes → DNA → genes
- ① _____ 4. Scientists organize chromosomes by
- A. type, beginning with the sex chromosomes
 - B. size, beginning with the longest pair
 - C. size, beginning with the shortest pair
 - D. placing them as random pairs
- ① _____ 5. The chromosomes that human females do not have is the
- A. sixteenth pair
 - B. X chromosome
 - C. Y chromosome
 - D. none of the above



Return to page 65 of the Student Module Booklet and begin Lesson 2.

For questions 6 to 8, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

- ① _____ 6. The resulting offspring of crossing a pure tall pea plant with a pure short pea plant are
- A. some tall and some short offspring
 - B. all tall offspring
 - C. all short offspring
 - D. no offspring
- ① _____ 7. Which of the following is used to predict the probability that offspring will inherit certain traits?
- A. genotype
 - B. chromosome map
 - C. Punnett square
 - D. none of the above
- ① _____ 8. If one parent has the genotype Cc for hair colour and the other parent has the genotype cc, what percentage of the offspring will have the recessive genotype for hair colour?
- A. 25%
 - B. 50%
 - C. 75%
 - D. 100%
9. Decide whether each of the following statements is true (T) or false (F). Place your answer in the blank space given.
- ① _____ a. Crossing two tall hybrid plants will result in offspring that are all short.
- ① _____ b. A genotype for any trait is made up of two genes.
- ① _____ c. The number of possible combinations of two genotypes is always four.
- ① _____ d. If one parent has both dominant genes for a trait, then all offspring will have the trait no matter what genotype the other parent has for the trait.



Return to page 70 of the Student Module Booklet and begin Lesson 3.

For questions 10 to 12, read each question carefully. Decide which of the choices BEST completes the statement or answers the question. Place your answer in the blank space given.

①

_____ 10. Sickle-cell anemia occurs when

- A. a base pair in a gene segment has parts interchanged
- B. a base pair is missing from a gene segment
- C. an offspring has only one chromosome
- D. there are no rungs in a gene segment

Use the following information to answer questions 11 and 12.

Two parents carry the gene, m, for a particular genetic disorder. Their genotypes are Mm and Mm. The following Punnett square shows the possible genotypes for their offspring.

| | M | m |
|---|----|----|
| M | MM | Mm |
| m | Mm | mm |

①

_____ 11. What percent of the offspring will for sure get the genetic disorder?

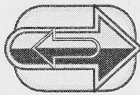
- A. 25%
- B. 50%
- C. 75%
- D. 100%

①

_____ 12. What percent of the offspring will **only** be carriers of the disorder?

- A. 25%
- B. 50%
- C. 75%
- D. 100%

- ② 13. Explain why albino corn seeds can germinate but will not survive for long even though the germinated seeds are placed in sunlight.



Return to page 74 of the Student Module Booklet and begin Lesson 4.

For questions 14 to 17, read each question carefully. Decide which of the choices BEST completes the statement. Place your answer in the blank space given.

- ① _____ 14. The set of genetic instructions that makes you what you are is called

A. an amniocentesis
B. mapping
C. a genome
D. a clone

- ① _____ 15. Transferring genes from one organism to another is known as

A. cloning
B. mapping
C. an amniocentesis
D. genetic engineering

- ① _____ 16. A procedure used to determine the chromosomal make-up of a fetus is called

A. cloning
B. mapping
C. an amniocentesis
D. genetic engineering

- ① _____ 17. The production of a biologically exact copy of an organism is called

A. cloning
B. mutation
C. genetic engineering
D. gene manipulation

②

18. List two concerns people may have about advances made in genetic research.



Submit your completed Assignment Booklet 3B to your teacher for assessment.
Then return to page 79 of the Student Module Booklet and begin the Section 4 Review.